

## ABSTRACT

5 The present method represents a three-dimensional shape model by  
polygons according to a plurality of object images information picked up by  
rotating a real object for every arbitrary angle to assign texture information  
on each polygon from object image information having the largest  
projection area of the relevant polygon. In order to improve the color  
continuity between adjacent polygons, the object image information having  
correspondence between a polygon of interest and an adjacent polygon  
10 thereof is selected so as to be the object image information approximating  
the shooting position and the shooting direction. An alternative method  
divides an object image into a plurality of regions, obtains difference  
between an object image and a background image in region level, outputs a  
mean value of the absolute value of difference in the region level, and  
15 detects the region having the mean value of absolute values of difference  
equal to or greater than a threshold value as the object portion. Another  
further method obtains a plurality of object images by shooting only a  
background of an object of interest and by shooting the object of interest  
during each rotation. A silhouette image is generated by carrying out a  
20 difference process between the object image and the background image. A  
voting process is carried out on the voxel space on the basis of the  
silhouette image. A polygon is generated according to the three-  
dimensional shape obtained by the voting process. The texture obtained  
from the object image is mapped to the polygon.